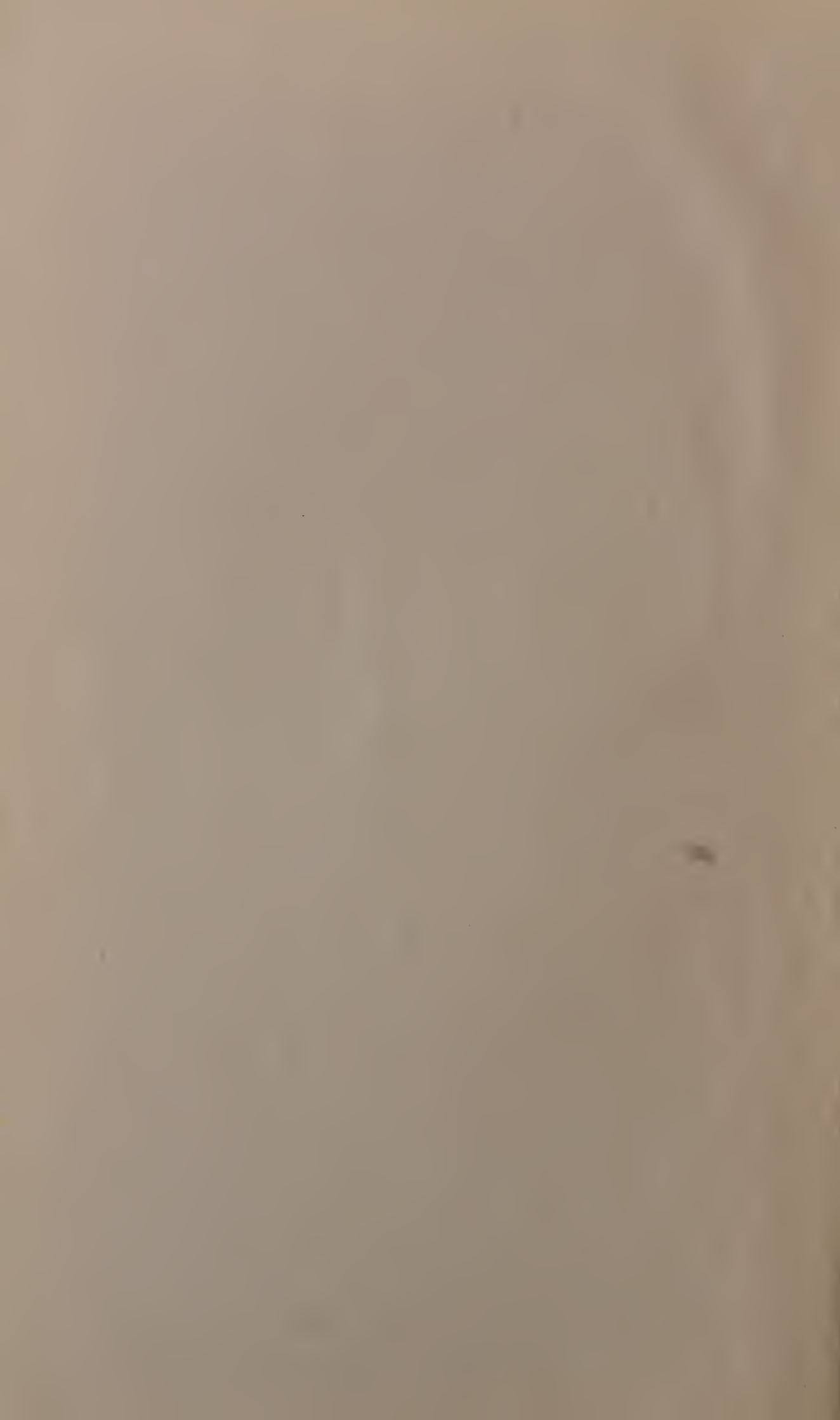


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DIVISION OF MINES
AND
STATE MINING BUREAU
1880 - 1943

BULLETIN 131

DIVISION OF MINES
FERRY BUILDING, SAN FRANCISCO

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
WARREN T. HANNUM, Director

DIVISION OF MINES

FERRY BUILDING, SAN FRANCISCO

WALTER W. BRADLEY

State Mineralogist

San Francisco]

BULLETIN 131

[September 1945

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INDEX MAP
OF
ECONOMIC MINERALS
IN
CALIFORNIA
AND THE
DISTRICTS OF THE DIVISION OF MINES

CALIFORNIA STATE DIVISION OF MINES
1943

DISTRICT OFFICES OF THE DIVISION OF MINES
San Francisco (main office)
Los Angeles
Sacramento
Redding

BOUNDARIES OF THE DISTRICTS

SCALE
0 50 100 200 MI.

Map showing the following districts and locations:

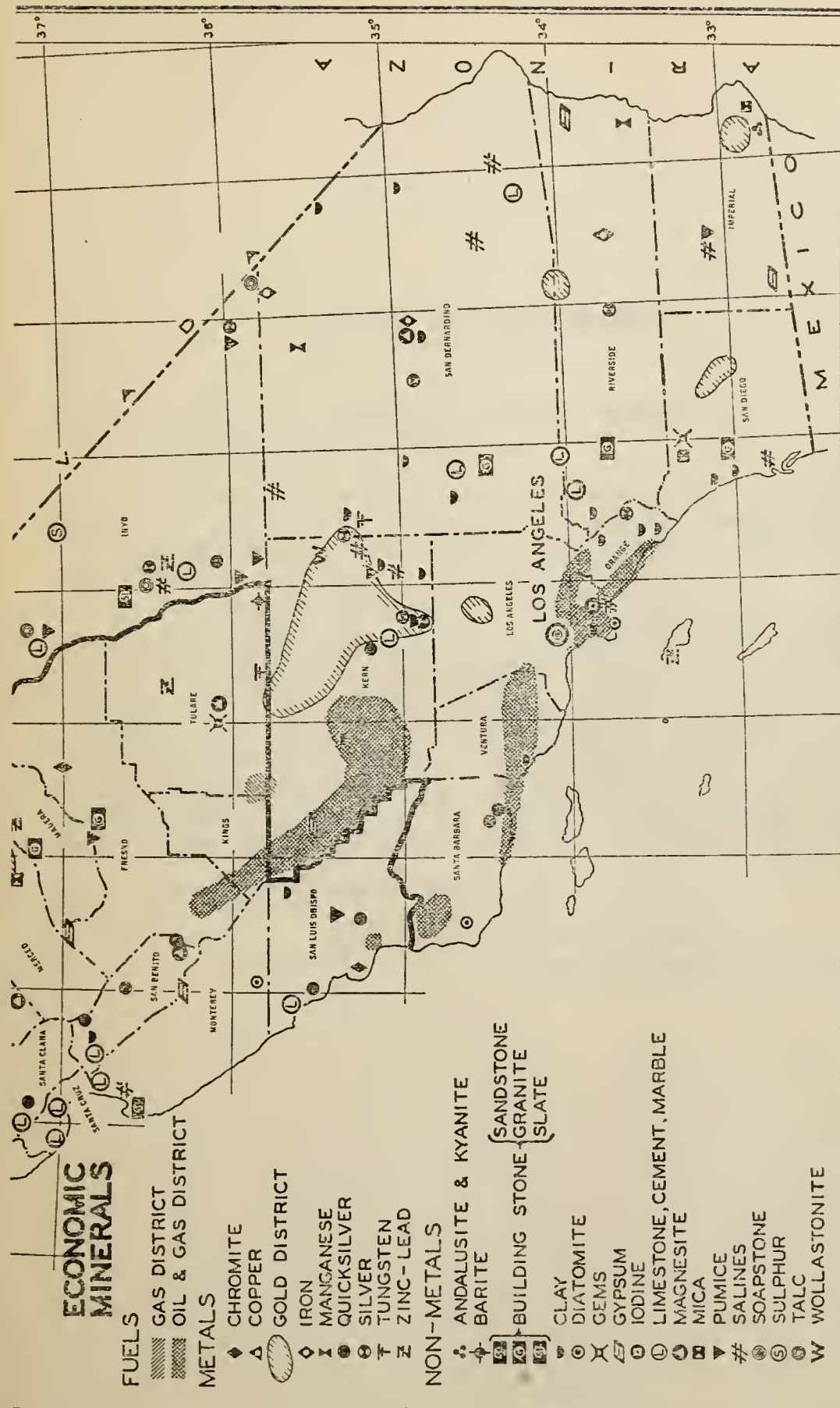
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- SAN FRANCISCO: CONTRA COSTA, ALAMEDA, SAN MATEO, MARIN, SOLANO, RAPA, SONOMA, LAKE, COLUSA, CLENN, MENDOCINO, TENAYA.

1943

**DISTRICT OFFICES
OF THE
DIVISION OF MINES**

San Francisco (main office)
Los Angeles
Sacramento
Redding

BOUNDARIES OF THE DISTRICTS



ECONOMIC MINERALS

FUELS

- GAS DISTRICT
- OIL & GAS DISTRICT

METALS

- CHROMITE
- COPPER
- GOLD DISTRICT
- IRON
- MANGANESE
- QUICKSILVER
- SILVER
- TUNGSTEN
- ZINC-LEAD

NON-METALS

- ANDALUSITE & KYANITE
- BARITE
- SANDSTONE
- GRANITE
- SLATE
- BUILDING STONE
- CLAY
- DIATOMITE
- GEMS
- GYPSUM
- IODINE
- LIMESTONE, CEMENT, MARBLE
- MAGNESITE
- MICA
- PUMICE
- SALINES
- SOAPSTONE
- SULPHUR
- TALC
- WOLLASTONITE

LETTER OF TRANSMITTAL

To HIS EXCELLENCY, THE HONORABLE EARL WARREN
Governor of the State of California

SIR: I have the honor to transmit herewith Bulletin No. 131 of the Division of Mines, of the Department of Natural Resources, entitled "Consolidated Index of Publications of the Division of Mines and predecessor State Mining Bureau, 1880-1943 inclusive."

The State Mining Bureau was created April 16, 1880, by legislative statute. The bureau was made a division of the Department of Natural Resources in 1927 on the creation of the department. Over the intervening years to the end of 1943, reports and bulletins (with maps, charts, and photographs) to a total of over 170 have been published.

The bulletin herein contains a consolidation of the indexes of those volumes, for convenient reference use of engineers, geologists, operators, and librarians who have need for frequent or even occasional consultations of these records published on California's mineral properties.

Respectfully submitted.

WARREN T. HANNUM
Director of Natural Resources

PREFACE

April 16, 1945, marked the Sixty-fifth Anniversary of the signing by Governor George C. Perkins (later United States Senator for California) of the bill introduced in the legislature by Assemblyman Joseph Wasson of Mono and Inyo counties, by which the State Mining Bureau was created, with headquarters in San Francisco. Under the authority of that act, Mr. Henry G. Hanks was shortly thereafter commissioned the first "State Mineralogist" of California.

Previously there had been two short-lived "geological surveys" in this state: the first under John B. Trask as State Geologist, 1853-1856; the second under James D. Whitney, 1860-1873. The fundamental idea underlying the creation of the State "Mining Bureau" was that it should be concerned primarily with an economic developmental survey of California's mineral resources and their utilization rather than solely as a "geological" survey. Provision was also made, however, in the organic act that geology should be included in the work of the bureau.

By enactment at the 1927 legislative session, Article IIj was added to the Political Code creating the Department of Natural Resources, and provided for the transfer of the State Mining Bureau to the new department as the "Division of Mines and Mining." This was amended in 1929, changing the name to "Division of Mines" and creating a "State Mining Board" to consist of five members whose duty is to determine "general policies for the guidance of the Division of Mines." These provisions were included in the consolidation and revision of the statutes under the "Public Resources Code" (Chap. 93, Stats. 1939).

The following have served as State Mineralogist: Henry G. Hanks, 1880-1886; Wm. Ireland, 1886-1893; J. J. Crawford, 1893-1897; A. S. Cooper, 1897-1901; Lewis E. Aubury, 1901-1911; Wm. H. Storms, December 1911-February 1913; Fletcher Hamilton, 1913-1923; Lloyd L. Root, February 1923-July 1928; the undersigned, incumbent, since August 1, 1928.

Over the intervening years, from 1880 to and including 1943, reports and bulletins to a total number of over 170 have been published from time to time describing in detail (with maps, charts, and photographs) the mining operations and the varied mineral substances available in this great commonwealth of California—their locations, character, geology, transportation facilities, state of development, utilization, and other pertinent data.

Beginning in 1912 the writer of this preface as librarian-engineer on the staff of the State Mining Bureau, started a card file consolidating the indexes of the then some 75 bulletins and reports of the bureau.

There was a lapse of work on this card file during absences from the office when the writer was assigned to duties as a field assistant. Later, the task was taken up by Miss M. Ruth Smith, supervising clerk with assistance from other members of the clerical staff, and continued as time and available personnel have permitted. We had before us as an

example of the utility of such a "consolidated index," the volume issued in 1907 by the American Institute of Mining Engineers covering that institute's Transactions, Volumes I-XXXV, 1871-1904 (inc.).

As the file grew (now comprising some 75,000 cards) its value and usefulness increased greatly, both to the technical staff of the Division of Mines and to visiting engineers, scientists, and research workers. We have had many requests that the card file be translated into printed form as a bulletin, so as to make it available for public distribution. It will be exceedingly valuable to engineers, geologists, research workers, companies and librarians, who have occasion to consult the 63 years' published records of the Division of Mines and its predecessor, the State Mining Bureau, covered by this index.

We do not claim perfection for this Index. Doubtless errors and omissions will be noted by those who consult it. We shall appreciate having any such called to our attention, for use in future supplements.

September 1, 1945

WALTER W. BRADLEY
State Mineralogist

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 July = Ju.
 October = Oc.

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Roman numerals QE 89 A1 C3 Reports of State Mineralogist
B TN 24 C3 A3 Bulletins
PR Preliminary Reports
RM Registers of Mines

THE TOWN OF NEWTON

Newton, Mass.	1880
Population	10,000
Area	100
Population per square mile	100

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- **Bulletin No. 1, A Description of Some Desiccated Human Remains.**
- **2, Methods of Mine Timbering.**
- **3, Gas and Petroleum Yielding Formations of Central Valley of California.**
- **4, Catalog of Californian Fossils.**
- **5, The Cyanide Process.**
- **6, California Gold Mill Practices.**
- **7, Mineral Production of California by Counties for the Year 1894.**
- **8, Mineral Production of California by Counties for the Year 1895.**
- **9, Mine Drainage, Pumps, etc.**
- **10, A Bibliography Relating to the Geology, Paleontology and Mineral Resources of California.**
- **11, Oil and Gas Yielding Formations of Los Angeles, Ventura and Santa Barbara Counties.**
- **12, Mineral Production of California by Counties for 1896.**
- **13, Mineral Production of California by Counties for 1897.**
- **14, Mineral Production of California by Counties for 1898.**
- **15, Map of Oil City Fields, Fresno County.**
- **16, The Genesis of Petroleum and Asphaltum in California.**
- **17, Mineral Production of California by Counties for 1899.**
- **18, Mother Lode Region of California.**
- **19, Oil and Gas Yielding Formations of California.**
- **20, Synopsis of General Report of State Mining Bureau.**
- **21, Mineral Production of California by Counties for 1900.**
- **22, Mineral Production of California for Fourteen Years.**
- **23, Copper Resources of California.**
- **24, The Saline Deposits of California.**
- **25, Mineral Production of California by Counties, 1901.**
- **26, Mineral Production of California for the Past Fifteen Years.**
- **27, The Quicksilver Resources of California.**
- **28, Mineral Production of California for 1902.**
- **29, Mineral Production of California for Sixteen Years.**
- **30, Bibliography Relating to the Geology, Paleontology, and Mineral Resources of California.**
- **31, Chemical Analyses of California Petroleum.**
- **32, Production and Use of Petroleum in California.**
- **33, Mineral Production of California by Counties, 1903.**

- **34, Mineral Production of California for Seventeen Years.
- **35, Mines and Minerals of California.
- **36, Gold Dredging in California.
- **37, Gems, Jewelers' Material, and Ornamental Stones of California.
- **38, Structural and Industrial Materials of California.
- **39, Mineral Production of California by Counties, 1904.
- **40, Mineral Production of California for eighteen years.
- **41, Mines and Minerals of California for 1904.
- **42, Mineral Production of California by Counties, 1905.
- **43, Mineral Production of California for Nineteen Years.
- **44, California Mines and Minerals for 1905.
- **45, Auriferous Black Sands of California.
- **46, General Index of Publications of the California State Mining Bureau.
- **47, Mineral Production of California by Counties, 1906.
- **48, Mineral Production of California for twenty years.
- **49, Mines and Minerals of California for 1906.
- 50, The Copper Resources of California.
- **51, Mineral Production of California by Counties, 1907.
- **52, Mineral Production of California for Twenty-one years.
- **53, Mineral Production of California for 1907 with County Maps.
- **54, Mineral Production of California by Counties, 1908.
- **55, Mineral Production of California for Twenty-two Years, 1908.
- **56, Mineral Production for 1908 with County Maps and Mining Laws of California.
- **57, Gold Dredging in California.
- **58, Mineral Production of California by Counties, 1909.
- **59, Mineral Production of California for Twenty-three Years.
- **60, Mineral Production for 1909, County Maps and Mining Laws of California.
- **61, Mineral Production of California by Counties for 1910.
- **62, Mineral Production of California for Twenty-four Years.
- **63, Petroleum in Southern California.
- **64, Mineral Production for 1911.
- **65, Mineral Production for 1912.
- **66, Mining Laws of the United States and California, 1914.
- **67, Minerals of California.
- **68, Mineral Production for 1913 with County Maps and Mining Laws.
- **69, Petroleum Industry of California with Folio of Maps.
- **70, Mineral Production for 1914 with County Maps and Mining Laws.
- **71, Mineral Production for 1915 with County Maps and Mining Laws.
- **72, Geologic Formations of California.
- **73, First Annual Report of the State Oil and Gas Supervisor of California for the Fiscal Year 1915-16.
- **74, Mineral Production of California in 1916 with County Maps.
- **75, United States and California Mining Laws, 1917.
- 76, Manganese and Chromium in California.
- 77, Catalog of Publications of California State Mining Bureau, 1880-1917.
- **78, Quicksilver Resources of California with a section on Metallurgy and Ore-Dressing.
- 79, Magnesite in California.
- **80, Tungsten, Molybdenum and Vanadium in California.
- **81, Foothill Copper Belt of California.
- **82, Second Annual Report of the State Oil and Gas Supervisor for the Fiscal Year 1916-17.
- **83, California Mineral Production for 1917 with County Maps.
- **84, Third Annual Report of the State Oil and Gas Supervisor for the Fiscal Year 1917-18.
- **85, Platinum and Allied Metals in California.
- **86, California Mineral Production for 1918.
- **87, Commercial Minerals of California with notes on their uses, distribution, properties, ores, field tests, and preparation for market.
- **88, California Mineral Production for 1919 with County Maps.
- **89, Petroleum Resources of California with Special Reference to Unproved Areas.
- **90, California Mineral Production for 1920 with County Maps.
- **91, Minerals of California.
- **92, Gold Placers of California, 1923.
- **93, Mineral Production of California for 1922.
- **94, Mineral Production of California for 1923.
- **95, Geology and Ore Deposits of the Randsburg Quadrangle.
- **96, Mineral Production of California for 1924.
- **97, Mineral Production of California for 1925.
- 98, American Mining Law.
- 99, Clay Resources and Ceramic Industry of California.
- **100, Mineral Production of California for 1926.
- **101, California Mineral Production for 1927.
- **102, California Mineral Production for 1928.

*Never printed.

**Out of print.

- **103, California Mineral Production for 1929.
- 104, Bibliography of the Geology and Mineral Resources of California to the End of 1930.
- **105, Mineral Production in California for 1930 and Directory of Producers.
- **106, Manner of Locating and Holding Mineral Claims in California (superseded by 120 and 127).
- **107, Mineral Production in California for 1931 and Directory of Producers.
- 108, Mother Lode Gold Belt of California.
- **109, California Mineral Production and Directory of Mineral Producers for 1932.
- **110, Mineral Production of California for 1933 and Directory of Producers.
- **111, Mineral Production of California for 1934 and Directory of Producers.
- **112, California Mineral Production and Directory of Mineral Producers for 1935.
- 113, Minerals of California.
- **114, California Mineral Production and Directory of Mineral Producers for 1936.
- 115, Bibliography of Geology and Mineral Resources of California, 1931 to 1936.
- **116, California Mineral Production and Directory of Mineral Producers for 1937.
- **117, California Mineral Production and Directory of Mineral Producers for 1938.
- 118, Geologic Formations and Economic Development of the Oil and Gas Fields of California.
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- **119, Mineral Production of California for 1939 and Directory of Producers.
- **120, Manner of Locating and Holding Mineral Claims in California, with Forms (superseded by B 127).
- **121, Mineral Production of California for 1940 and Directory of Producers.
- **122, Mineral Production of California for 1941 and Directory of Producers.
- 123, American Mining Law.
- 124, Commercial Minerals of California.
- 125, Manganese in California.
- 126, Mineral Production of California for 1942 and Directory of Producers.
- 127, Manner of Locating and Holding Mineral Claims in California.
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**Out of print.

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